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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/831,736	05/14/2001	Keiji Otaki	109508	7118

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OLIFF & BERRIDGE, PLC
P.O. BOX 19928
ALEXANDRIA, VA 22320

EXAMINER

HUG, ERIC J

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 09/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/831,736	Applicant(s) OTAKI ET AL.	
	Examiner Eric Hug	Art Unit 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 5, 7, 9, and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 5 recites the limitation "the corresponding orifice". There is insufficient antecedent basis for this limitation in the claim. It is also unclear what is meant by the last phrase "the orifice in a lowerside region has a diameter smaller than that of the corresponding orifice in an upper side region", as "lowerside region", "upper side region", and "corresponding orifice" are not defined. From the drawings, it appears that in each longitudinal row, the lowermost orifice is smaller in diameter than the other orifices within the same longitudinal row.

Regarding claim 7, it is unclear what is meant by "lowerside region" and "upper side region", and which particular orifices are being claimed within those regions.

Claim 9 depends from claim 5. Claim 11 depends from claim 7.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 6, 8, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Houpt (US 5,514,199) in view of Slater et al (US 3,026,563). Houpt discloses a spinner for making dual component glass fibers. In Figure 3, the spinner is shown to have an outer wall (64) with orifices (90) of like size arranged in vertical rows. Each vertical row communicates with a compartment (88). Molten glass types A and B are fed to alternating compartments. Thus, alternating rows of orifices deliver fibers of types A or B. The relative sizes of the orifices may differ to produce different flow rates of fibers of types A and B, thus producing different percentages of A and B. Therefore, alternating vertical rows may have orifices of different diameter. See column 5, lines 8-32. The result is two types of orifices having different diameter arranged in alternating fashion circumferential around the peripheral face of the spinner. This would also result in alternating longitudinal rows (or bands) of orifices of different diameter arranged in the circumferential direction. With regards to the orifice size, the diameter can be varied between 0.25 to 1.0 mm (column 5, line 21). The diameters are of equal size when equal amounts of types A and B are produced, and then varied as the composition changes. Thus, varying the diameter between 0.25 to 1.0 mm would obviously encompass the claimed diameter difference between 0.02 to 0.3 mm depending on the composition. Varying the relative diameter would also have been prima facie obvious in view of *In re Boesch*, 205 USPQ 215 (CCPA 1980)

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(the discovery of an optimum value of a known result effective variable without producing any new or unexpected results is within the skill of the routineer in the art), as Houpt has expressly disclosed that relative diameter is a result effective variable.

Houpt discloses the claimed arrangement of orifices for a spinning rotor used to make glass fibers. With regards to the steps of the method of claim 1, Houpt does not explicitly describe each and every step of making glass fibers by spinning. Slater is cited here as necessary to show those steps not explicitly disclosed by Houpt. Slater exemplifies that it is well known in the art to produce glass fibers according to the claimed steps of heating and rotating a hollow cylinder-shaped rotating member having a peripheral wall provided with orifices to rotate molten glass therein, ejecting the molten glass through the orifices by centrifugal force to form glass fibers, introducing primary streams into flame flow around the rotating member with the flame flow ejected in a direction substantially parallel with the generatrix direction of the outer circumference of the peripheral wall to fine primary streams and form secondary fibers, and ejecting a compressed fluid at an acute angle relative to the flame flow including secondary fibers to collide with the secondary fibers. The position of the compressed fluid ejector in Slater appears to be at an angle between 15-30 degrees and greater than 30 mm away from the bottom of the wall of the rotating member. With regards to the apparatus features of claim 4, Slater shows a hollow shaped rotating member (even having two types of orifices in Figure 6, though arranged differently), a circular drawing burner, and an ejecting nozzle around the burner.

Thus, at the time of the invention, it would have been obvious to one skilled in the art that the glass fibers made using the spinning rotor of Houpt are made according to the well-known steps given above and as shown by Slater.

3. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huey et al (US 4,636,234) in view of Slater et al. Huey discloses a method of making mineral fibers such as glass fibers using a bushing or a spinning rotor having non-circular orifices. The configuration in Figure 14 shows orifices of different size and shape. When applied to a spinning rotor, these different orifices alternate in the circumferential direction. The different sized and shaped orifices effectively have a different diameter.

Huey discloses the claimed arrangement of orifices for a spinning rotor used to make glass fibers. With regards to the steps of the method of claim 1, Huey does not explicitly describe each and every step of making glass fibers by spinning. Slater is cited here as necessary to show those steps not explicitly disclosed by Huey. Slater exemplifies that it is well known in the art to produce glass fibers according to the claimed steps of heating and rotating a hollow cylinder-shaped rotating member having a peripheral wall provided with orifices to rotate molten glass therein, ejecting the molten glass through the orifices by centrifugal force to form glass fibers, introducing primary streams into flame flow around the rotating member with the flame flow ejected in a direction substantially parallel with the generatrix direction of the outer circumference of the peripheral wall to fine primary streams and form secondary fibers, and ejecting a compressed fluid at an acute angle relative to the flame flow including secondary fibers to collide with the secondary fibers. The position of the compressed fluid ejector in Slater appears to be at an angle between 15-30 degrees and greater than 30 mm away from the bottom of the wall of the rotating member. With regards to the apparatus features of claim 4, Slater

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shows a hollow shaped rotating member (even having two types of orifices in Figure 6, though arranged differently), a circular drawing burner, and an ejecting nozzle around the burner.

Thus, at the time of the invention, it would have been obvious to one skilled in the art that the glass fibers made using the spinning rotor of Huey are made according to the well-known steps given above and as shown by Slater.

4. Claims 1-4, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rook et al (US 5,326,241) in view of Slater et al. Rook discloses an apparatus for forming fibers such as glass fibers using a spinning rotor having orifices of different diameter. The holes have varying size to produce fibers having different diameter. The configuration in Figure 2a shows alternating rows of orifices of different sizes. Rooks discloses in column 5, lines 5-9, that the various hole sizes may be varied within each row, therefore would vary in the circumferential direction. The hole sizes range from 0.003-0.080 inches (column 4, line 63), which is equivalently 0.076-2.03 mm. Any difference in diameter between orifice sizes would then clearly read on the claimed range of 0.02-0.3 mm.

Rook discloses the claimed arrangement of orifices for a spinning rotor used to make glass fibers. With regards to the steps of the method of claim 1, Rook does not explicitly describe each and every step of making glass fibers by spinning. Slater is cited here as necessary to show those steps not explicitly disclosed by Rook. Slater exemplifies that it is well known in the art to produce glass fibers according to the claimed steps of heating and rotating a hollow cylinder-shaped rotating member having a peripheral wall provided with orifices to rotate molten glass therein, ejecting the molten glass through the orifices by centrifugal force to form glass

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fibers, introducing primary streams into flame flow around the rotating member with the flame flow ejected in a direction substantially parallel with the generatrix direction of the outer circumference of the peripheral wall to fine primary streams and form secondary fibers, and ejecting a compressed fluid at an acute angle relative to the flame flow including secondary fibers to collide with the secondary fibers. The position of the compressed fluid ejector in Slater appears to be at an angle between 15-30 degrees and greater than 30 mm away from the bottom of the wall of the rotating member. With regards to the apparatus features of claim 4, Slater shows a hollow shaped rotating member (even having two types of orifices in Figure 6, though arranged differently), a circular drawing burner, and an ejecting nozzle around the burner.

Thus, at the time of the invention, it would have been obvious to one skilled in the art that the glass fibers made using the spinning rotor of Rook are made according to the well-known steps given above and as shown by Slater.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Britts, II et al (US 4,689,061) discloses a method for making glass fibers using a rotor having bands of orifices of like diameter spaced apart from other bands by blank areas. The diameter of the orifices increases from the bottom band to the top band.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Hug whose telephone number is 703 308-1980. The examiner can normally be reached on Monday through Friday, 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 703 308-1164. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0651.


jeh


STEVEN P. GRIFFIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1701